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ABSTRACT

Designed to aid teachers who are planning classes in the telematics mode, this checklist begins by reminding them that, in this mode, students cannot see them in the conventional sense, and classes are conducted using computer, telephone, modem, and microphone links. The checklist covers the following areas of concern: (1) the planning stage, specifically, practical and administrative checks; (2) situational and operational checks; (3) trouble shooting and back-up checks; (4) materials development; (5) the first few sessions, when the students are introduced to the teacher and the equipment; (6) practical lesson checks; and (7) student learning characteristics checks. The checklist also offers helpful hints about the technology used. (DB)

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Distance Education by Interactive Telematics: a Checklist for Teachers

Compiled by Sue McNamara

from information provided by rural post-primary school teachers attending the DEBIT in-service activity

Bendigo CAE, December 1988

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Introduction

- In a telematics mode your students will not be able to 'see' you in the conventional sense, so when planning and holding your classes you, and they, will have to develop your other senses - and fine tune other sensitivities - in order to be responsive to their, and your, needs and requirements. This takes time and work so don't expect everything to happen immediately, nor at once. Be patient and learn by experience.

- Each learning situation is different, and the usefulness of the factors included in this list will differ accordingly. This checklist is by no means conclusive, but it is the compilation of experience – and inexperience – and it is from the practitioners position.

Thanks to all the contributors.

Sue McNamara

The Sections

A Planning: practical and administrative checks
B Situational and operational checks
C Trouble shooting and back-up checks
D Materials development checks.
E The first few sessions
F Practical lesson checks
G Learning characteristics checks

A Planning: practical and administrative checks

1. *How much support can you count on from the school?*
   The more support you, the teacher, has from the administration, other teachers, parents and students, the more effectively you can operate. Try to encourage others by letting them know what you are doing, contributing ideas to them and asking for their ideas in your work.

2. *Who are my students? Who is studying what? What are they like?*
   A list of student's names is not enough. Try to find out as much about your students as you can before the course begins. Obtain student profiles, photographs and past academic records if you can. Have a teleconference with teachers who will have the students to find out their impressions.

3. *Who's teaching what in our cluster? Who can I ask for sympathy, understanding, help?*
   Find out about the other teachers in the cluster who will be using the system. If possible set up a support team across the cluster, for both staff and students. Create as many mechanisms as you can for sharing - information, expertise and resources.

4. *What's happening when?*
   Obtain copies of all participating school's timetables and special events calendars (e.g. sports days, excursions) so that you know, as far as possible, when to expect hitches in your planning. During the year a bulletin board (E-mail) might be used between the cluster to notify all schools of excursions, and anything else they may need to know. It might be the responsibility of a particular member of staff or a student in each school to keep this bulletin board up to date.

5. *What does their set up look like?*
   If you can, go and look at the facilities and layout of the schools who will be receiving your classes, so that during classes you can picture the situation of your remote students. If a visit isn't possible you might use this as a 'getting to know you and the equipment' activity in your initial classes. Have students draw a plan of their own facility and discuss it.

Get to know as much as you can about the people and situation before you begin teaching, particularly if you have not used the approach before.

B Situational and operational checks

1. *Is it all together so that its easy and comfortable to use?*
   Good ergonomic layout of the equipment is essential for ease of use. If it's in the broom closet make sure you have enough light and air. Are the chairs (almost) comfortable. Are the acoustics appropriate? Are you going to be drowned out by noise from outside the room?

   Some schools will require that the equipment be portable. In which case try to organise the timetabled rooms so that students are consistently in one room for a particular class. It's much easier to become familiar with, comfortable and confident in using equipment if you are in familiar surroundings. It also makes trouble shooting much easier. Constant reorganization of equipment and different surroundings can lead to disorientation, hesitation and loss of confidence.

2. *How do I know what goes where?*
   Color code and label every piece of equipment. Put diagrams and notes (Neil Elliott has provided some wall charts) up on the walls. Practice connecting and disconnecting until you are comfortable with the equipment. (Practice either on your own or with company!)

If its organised properly it doesn't look frightening! If it doesn't look frightening then it quickly becomes 'user friendly'!

C Trouble shooting and back-up checks

1. *How do I try to ensure that nothing goes wrong with the equipment or my work discs?*
   Always back-up your disks. Keep hard copies of work in case of line failure. Have an alternate mode of operation, especially in the first few classes in case anything goes wrong (notes, exercises which can be completed).

   Develop a breakdown procedure. If the line breaks who contacts whom? Does the provider school restart the link? If possible have an alternative phone number available in case of breakdown for cross-school communication.

2. *How do I trouble shoot?*
   Neil Elliott has provided quite a bit of information on this area and as each real problem tends to be unique its a hard one to address in general terms. **But** have you checked that the power is on? Are the batteries in the microphone flat? Have you put the disk in the disk drive? Have you got paper in the printer? Are you sure there is someone at the other end of the line? Is everything plugged in? These might seem minor, but that's what most problems are! If it's major, call the school trouble shooter; more major, call Neil!

Murphy would say , "If something can go wrong it will!" But the what does Murphy know!
The pessimist would say, "Didn't trust that technology anyway".
The optimist would say, "Well there's another piece of information I can add to my list and eliminate in checking next time!"

D Materials Development Checks

1. *What are my objectives for this unit?*
   When you begin to plan the unit ask yourself what the unit is intended to achieve? Why should the students do it? What do they have to obtain/learn from doing the unit? What types of learning are involved? How is this learning to be achieved?

2. *What resources are available to achieve these objectives?*
   What materials, exercises and assignments do you already have (perhaps from having taught it as a classroom unit before)? Are these useful in their present form or will they have to be modified to suit a telematics mode? What else do I need to plan as materials for this unit? You might need to check to find out what materials the other schools have too.

3. *What types of learning approaches are available?*
   There are many different types of learning approaches. Here are some from which to choose?
   - specific question answer (objective)
   - rule - example, example - rule
   - discussion
   - group work
   - discovery learning
   - social interaction (phone conversations)
   - co-operative projects
   - individual projects
   - seat work
   - games, puzzles
   - problem solving

4. *Do the objectives require visual, text or concrete materials?*
   If students are performing experiments, you will have to check access to them. You might have a colleague in the remote school or a particular student responsible for checking these administrative details.

5. *Have I left myself enough time to develop the required materials which I don't already have?*
   If you can't type it takes time. If you can't draw it takes time. You can short cut by using a scanner, but make sure your writing and drawings, diagrams are clear enough for the scanner to handle (that's if you have one!) Give yourself twice as much time as you think you'll need to do it. Don't forget you may have to learn to manipulate the package (program) as well as design your materials.

6. *Which materials do I use when?*
   Organise the lessons in a rough plan *before* you begin to develop them so that you will be able to plan also the most effective and efficient way of presenting them. Think about economics and time and the type of task/learning required. Try not to use technology *just* for the sake of using technology. Is the material best presented on disk, or on hard copy (via the fax), in text form or in diagrammatic form, or in verbal form (discussion)? Try and develop an alternative form at the same time for emergency use.

   Some hints. For the Mac use only simple fonts, they are much easier to read. For the Mac overhead projector minimum size of letters should be 12 point, preferably 14 point.

7. *Which students need what?*
   'Help' mechanisms must be built into the materials as far as possible. remember the student does not have the face-to-face contact on which much classroom learning relies. Students need different types of help. Remember the learner differences! What challenges should be built into the materials? What specific aptitudes, abilities, skills and experiences are needed in this unit? How do I compensate for those who do not have them? Have I checked the degree of difficulty of the material and the amount of information required?

8. *How do I deliver?*
   Use the most appropriate (for learning) mechanism rather than for technology's sake or because you want the quickest way. The quickest isn't always the best.

Put yourself in your student's shoes. How would you like to learn/be taught? What would you need/want to know and how would you like different sorts of information and tasks presented?

E The first few sessions

1. *How do you do?*
   If possible meet your students in person before the first class. If that isn't possible use the first two or three classes to get to know them, and they get to know you, and both get to know the equipment and the course requirements. One activity is to get them to send each other (and you of course) a profile of themselves (even if you have an 'official' dossier on them). Let them tell their own story.

2. *How do you (the student) feel about learning this way?*
   Be aware that some of your students might feel very reluctant about it, particularly if they have the pressure of being the only one in the school who is doing the subject at a remote location (no peer help) and that they too may be unfamiliar with the equipment.

3. *What if something goes wrong?*
   At least for the first session or two try to have a familiar user (either teacher or student) with remote students (and within shouting distance from you if you want it) for moral support. It's a good idea if established personnel roles for who to contact if trouble occurs can be known by students and teachers throughout the year.

4. *How much do they know?*
The first lesson or two might need to be devoted to finding out what your students know and their 'operational literacy' of the equipment. Both students and staff should have the opportunity of using the equipment and establishing/disconnecting the link before serious class work begins.

5. *What are the steps in getting the equipment going?*
Before you make any electronic contact via Mac or Duct, define the procedures you will use between schools in the cluster. Does the provider generate the link, or the receiver. Perhaps two routines will be required for when the school is provider and when it is receiver. Put copies of the procedures for establishing etc on the wall, give one to each user.

Don't panic. You are learning and so are they. It might take a few goes, but eventually you will develop your own style.

F Practical lesson checks

1. *Do I have a consistent lesson pattern?*
A consistent lesson pattern, with a little variation now and again, allows students to 'get to the point' much more efficiently and not get tied up in operational or administrative details. A lesson pattern might consist of:
1. Greeting 2. Roll Call 3. Administration (homework, notices etc) 4. Review of past work 5. New work 6. Practice 7. Farewell, signing off, disconnection.

2. *What do I say when we begin each lesson?*
Try *Hello*!. Then check for any hiccups, for example, parties not connected. If hiccups have occurred and can be quickly rectified, fix them. If they are more complex, set the rest of the link to work and then deal with the hassled ones. Don't keep students in limbo if it can be avoided.

3. *Have I got the instructions, clear, concise and to the point ?*
Although it is inevitable that there will be jargon, try to avoid it. It doesn't matter if you call it a cursor, pointer, arrow or flashing dot as long as the students know to what you are referring. But try to be clear, concise, succinct, and down to earth in your explanations. Its best too to try not to use your hands to explain points. After all your remote students can't see your hand signals!

4. *What happens if they haven't done the required pre-reading and homework?*
Discipline might pose a problem in some instances. Depending on the students and the school, you may or may not have a supervising colleague with your remote students. If not, you cannot afford to let the rest of the class suffer for one. (This is where knowing your student really comes in handy, as you can soon quickly decide if the work not done is a serious infringement, has a good reason and explanation or shouldn't be tolerated.) You might say 'the show must go on' and again depending on the gravity of the offence, check it with a teacher in the remote school, or make arrangements to help the student catch up on a one-to-one basis outside this class time.

5. *Have I got a range of activities in my lesson ?*
It is best to teach in short bursts. You have at your disposal a great opportunity for students to interact (even more than in the classroom situation). You can do this by down loading disk material before the lesson instead of wasting time through it, and then letting them work either interactively on the screen, or in groups if numbers permit. Try not to depend too much on the one piece of equipment. The question is, Which is most suited to the task?

6. *Have I allowed sufficient time to teach (and for students to learn) the new component?*
Sequences might have to be lengthened or shortened in comparison to what you do in the classroom. Try to avoid long delays in transmitting material, or typing on the screen if you are not a fast typist. You can *prepare it beforehand* and use commands such as the 'Go To Page #...' in Ms Works to go quickly to where you want to go.

7. *Am I sure that my students understand the work?*
Written assignments, as in the classroom, will give some indication, but don't forget we rely a lot in the classroom on what we can see, to gauge if a student understands. We can't use the same method in telematics teaching, so try to develop a particular questioning style. The student might be answering *yes* but meaning *no*. Apart from eventually learning to read their voices and the nuances of their speech, its a good idea to ask questions which cannot be simply answered by yes or no. Ask them to explain how a formula might work, give a brief example of the application of some information. How would it apply to you? Which is ... Why?

It's better to be over prepared than under prepared.

G Learning characteristic checks

1. *Gender differences.*
Are there more girls than boys in the group, or vice versa? Are the boys or the girls likely to dominate in this topic? How can I make sure that both girls and boys participate equally? e.g. separate times of access for both
mixing boys and girls
mixing quiet and lively students

2. *Individual differences*
Prior experience: What experiences relevant to this task/topic has *each* student had?
What implications has this for the manner in which the topic is developed?
What kinds of challenges, activities, assignments are needed in relation to the student's prior experience ?
Will their prior experiences serve to motivate or demotivate the student?
What kinds of assistance, e.g. keys, hints, feedback, will I have to include in the topic work to cater for this student's past experience (or lack of it)?
What prior knowledge of the topic, should students have – do students have?

Learning styles: Is the information mainly visual or text based?
Does the student need further explanations, alternative modes of delivery?
What procedures should I use? e.g. rule-example, example-rule, discovery mode.
Should this student work in a group or on his/her own?
Is this student likely to continue on their own or will they need assistance from me or from other students?

Existing skill levels: What are student's general skill levels? (reading, writing)
What specific skills, aptitudes, abilities have the students to use with regard to the present topic?

Some hints for using Mac-fax-Duct

Duct

- o Check that input No. 1 is used if you do not wish to use the internal microphone.
- o Ensure external speaker is connected for clarity of sound.
- o Start with volume turned to minimum.

Modem

- o Ensure all leads are inserted correctly
- o Check dip switches are in correct position
- o Check you are using correct power supply

Graphics Tablet

- o Ensure that you select (Tablet) in Control Panel (under Mouse icon).

Intermac

- o Use standard software, generally MS Works and CheapPaint, standard fonts Athens, Boston, Chicago, Geneva, Monaco.
- o Check Chooser is set to *modem* port and has AppleTalk disconnected.
- o Check Control Panel has RAM cache set at 32k.
- o Transfer files in a separate operation with MS Works communication program. Hang up and turn modem off and on after this and before using Intermac.
- o Open application first then open Intermac.
- o When Intermac has been turned on, **never scroll**, use go-to-page technique and the CheapPaint DA for an interactive blackboard.
- o Turn off scroll on SuperPaint. Clear SuperPaint blackboard and reduce.
- o To shut down, turn off Intermac in the Intermac window simultaneously. Then separately hang up in the mini-terminal window. Turn the modem off and on.